

# BURRAGE (W. L.)

## Three Years' Experience with the Electrical Treatment of Fibroid Tumors of the Uterus

WITH A REPORT OF FORTY-FOUR CASES.

BY

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# THREE YEARS' EXPERIENCE WITH THE ELECTRICAL TREATMENT OF FIBROID TUMORS OF THE UTERUS.<sup>1</sup>

WITH A REPORT OF FORTY-FOUR CASES.

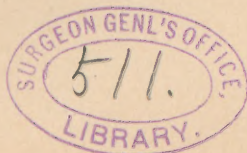
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MAY 9TH, 1891, I had the honor to read before this Society a paper on the technique of the Apostoli method of treatment, and announced at that time my purpose later of reporting results. In a paper published in the *Boston Medical and Surgical Journal* for June 16th, 1892, I gave some results in the treatment of pelvic inflammation. I wish now to give results in the treatment of fibroids.

My interest in this subject was especially aroused by a visit to Apostoli at his clinic in Paris in the summer of 1889. Although I treated several cases of fibroids with electricity during the following year, it was not until the establishment of the electrical clinic at the Free Hospital for Women in this city, in October, 1890, that the opportunity was afforded me to apply electricity to any considerable number of patients.

It is now ten years since Apostoli first called the attention of the profession to the electrical treatment of fibroids. The subject is still under judgment, and it is my purpose in presenting this paper to add my mite toward the determination of the place that electricity should hold in the treatment of this very common disease with which women are afflicted. I approached my task in an unprejudiced frame of mind, having read, on the one hand, Apostoli's articles, and also the Keiths' book, in which they declared their intention to lay aside the knife in favor of electricity; and, on the other, the attacks of Lawson Tait and other abdominal surgeons on this therapeutic measure. I have tried not to be biassed and to give the treatment a fair trial—to see facts as they are, and not as I should like to have them.

<sup>1</sup> Read by invitation before the Obstetrical Society of Boston, January 13th, 1894.



The diagnoses are my own, though sometimes I have had the corroboration of such men as Drs. W. H. Baker, F. H. Davenport, J. B. Swift, F. W. Johnson, and the late Dr. C. P. Strong, all of whom kindly sent me cases. I want here to express my obligations to them and to the many other practitioners who have referred cases for treatment. The diagnoses have been confirmed by repeated examinations extending over months and often years, and under varying conditions.

During the three years from October 18th, 1890, to October 18th, 1893, I have seen in hospital and private practice ninety-eight cases of fibroid tumor of the uterus. Forty-four of these were treated with electricity and received at least six treatments each. I present the chief facts as to these forty-four cases in tabular form to-night. The cases treated with less than six applications have been excluded from consideration. No mention is made, also, of the cases of doubtful diagnosis. A number were treated tentatively, and it has been only in those instances where the diagnosis was reasonably sure after numerous examinations that they have been included in the tables. In an experimental way were treated two cases of ovarian cystoma (diagnosis confirmed by celiotomy in one); a cyst of the broad ligament (celiotomy); a case of cancer of the uterus (microscopic examination of piece removed for diagnosis); a fibroid with malignant degeneration; and many cases of pus tubes, several verified by subsequent operation. I satisfied myself in these cases that electricity had no effect except in a majority to relieve pain. In a considerable number of the cases included in the tables I was favored in making a diagnosis by an ether examination, and in a few by an ether examination at the beginning and another at the end of treatment.

At the Free Hospital electrical clinic there were made during the three years 2,176 applications of electricity. Not all of these were to fibroids, as the clinic is for the application of electricity in the diseases of women.

For the details of treatment you are referred to my paper on the technique before spoken of. It was published in the *Boston Medical and Surgical Journal* for November 26th, 1891. I have followed Apostoli's methods rigidly, except in one particular, and that is, I have given vaginal galvanism in certain cases where experience taught favorable symptomatic results were to be expected, and where it was an anatomical impossibility to



give intra-uterine treatment or impossible or inexpedient to puncture. The treatment was usually begun with vaginal application. Apostoli, as you know, claims that vaginal galvanism is useless.

A word as to instruments used. For battery, Law cells, forty-eight at the hospital and sixty-five at my office; for faradism, Waite & Bartlett's three-coil Dubois-Reymond apparatus operated by four Law cells; for galvanometers, the GaiFFE and McIntosh; for rheostats, the Bailey and Massey; for clay plate, that manufactured by Waite & Bartlett—clay in muslin, ten by twelve inches; for intra-uterine electrodes, platinum tips, one-inch and two-inch; for vaginal electrodes, a brass ball covered with thick layers of absorbent cotton and gauze; for faradism, the vaginal and intra-uterine bipolar electrodes of Apostoli; for puncture, the gold-tipped Apostoli needle. The measurements, both uterine depth and circumference of the abdomen, have all been made with the same steel tape graduated in centimetres. Measurements of the abdomen were in every case taken with the patient lying on the back with knees bent and all clothing loosened.

The following measurements were taken: Circumference at umbilicus; circumference at largest part; distance from tip of ensiform cartilage to the umbilicus, from umbilicus to pubic symphysis, and from umbilicus to the anterior superior spine of the ilium on each side. And here let me say it has been a constant source of regret that exact measurements of the size of fibroid tumors cannot be made. The condition of fulness or emptiness of the intestines, bladder, and rectum, the varying thickness of the fat of the parietal walls and omentum, and the changing shape of the tumor with accompanying alteration in direction and length of the uterine canal, effectually prevent accurate measurements with calipers or otherwise. We have to be governed by tactile sense, and by repeated examinations under as nearly similar conditions as possible, before deciding on the relative size of a given tumor. The fact that fibroids are smaller just after the catamenia and larger during and just before, and also that they vary in size from day to day owing to temporary engorgement or depletion, has been forcibly impressed on me since I have followed up this subject.

The intra-uterine measurements were taken with the greatest possible precision, careful attempts being made to get the ex-

treme depth in every instance; measurements with the steel tape direct from the sound or probe. The treatments have been made twice a week as a rule, and of an average duration of from four to eight minutes.

Cleanliness and antisepsis have been the practice. For details I must refer to my former paper already alluded to. It has been my custom to give personal attention to the details, and I have myself examined all the cases and kept track of them from the beginning of treatment.

My aim has been to follow up the patients for as long a time as possible, in order to gain reliable information as to the permanency of results. Three years seems to be a reasonable length of time for an investigation of this sort.

In the tables the ° mark means milampères. Unless otherwise specified, the treatments are with galvanism. P is for positive, N for negative. F, M, and C are for fine, medium, and coarse coils. The faradism is bipolar vaginal, unless some other form is indicated. In analyzing the results I shall consider the cases first from an anatomical standpoint—the increase or decrease in size of the tumor; and, second, from a symptomatic point of view—the effect on pain, hemorrhage, and general health.

Although forty-four cases are included in the tables, we shall consider only thirty-five in our analysis of anatomical results, for the reason that nine of the forty-four have either not had sufficient intra-uterine application, or have not been under observation what, to me, seems a proper length of time. The nine cases are Nos. 36 to 44 inclusive. Each of the thirty-five cases has had at least six treatments with galvanism, either intra-uterine or by puncture, and with intensities rising fifty milampères, and in addition has been under observation at least four months from the beginning of electrical treatment, a majority from one and a half to two years. When possible, and in most instances, I purposely refrained from prescribing tonics or any other treatment, local or general, so that the results might be fairly attributed to the electricity. In speaking of the symptomatic results I include the entire forty-four cases, except in estimating permanent benefit, where a minimum of four months under observation will be adhered to, thus limiting the number to thirty-five.

First, anatomical results—the effect of galvanism on the size



of fibroids. Of thirty-five cases, nine, Nos. 1, 3, 7, 10, 14, 15, 16, 19, and 27, showed a decrease in size at the end of periods ranging from one to eight months from the beginning of treatment. But in six of these nine, Nos. 1, 10, 14, 16, 19, and 27, at the end of periods of time varying from one and a half to two and a half years the tumor was as large as at the beginning, or larger: Nos. 1, 10, 16, and 19 were larger, Nos. 14 and 27 were the same size. The other three, Nos. 3, 7, and 15, were lost track of in eight months, four months, and eight months respectively. That is to say, we have no positive evidence that any of the tumors were permanently lessened in size as a result of electrical treatment—a showing not at all in accordance with the published results of Apostoli and others. Seven out of thirty-five, Nos. 1, 4, 9, 10, 12, 16, and 19, were a little larger at the end of one and a half to two and a half years. Four of these were treated with galvano-puncture: No. 9 by puncture through the abdominal walls with two steel needles by Dr. Baker, a current of one hundred and twenty-five milampères for ten minutes being used; the other three were treated by vaginal puncture after the method of Apostoli. The seven cases had treatments in number as follows: No. 1, 50; 4, 49; 9, 40; 10, 18; 12, 20; 16, 13; and 19, 41. No. 4 increased a little in size in eight months and then remained stationary for a year and a half. In No. 10 a myomectomy was done and opportunity offered to measure the fibroid nodule exactly. Myomectomy was also done in No. 33 of my series. In No. 16 a hysterectomy was performed, the tumor proving to be rather soft from a predominance of the muscular elements. Deducting from thirty-five the seven cases in which the tumor became larger and the three cases in which it was smaller when the patient was last seen, and we have left twenty-five as the number of cases in which the tumor remained of the same size.

It has been my experience that galvanism clears up pelvic inflammatory exudate and improves the physical condition of inflamed tubes and ovaries, unless there is pus present. A fibroid uterus, fixed and immovable, after treatment with galvanism becomes free; a mass in the pelvis made up of tube, ovary, and exudate disappears. Such a result was noted in seven of my cases, Nos. 1, 5, 8, 23, 27, 29, and 31. The only other change in the physical conditions that seemed to be due to electrical

treatment was an increase in the panniculus adiposus of the abdominal parietes.

The uterine measurements show very little change as a result of treatment, in this respect varying from some of the results reported by other observers. Every effort was made to take the uterine depth always in the same manner. Fractions of a centimetre must be allowed for the tip of the probe going into a horn of the uterus, for its catching on a projection in the canal, and for uneven pressure on the crown of the cervix by the registering finger or forceps.

Intra-uterine applications of galvanism, positive, have a temporary curative effect on the endometritis of fibroids, but not a permanent effect. An illustrative case is No. 27, who had the most thorough intra-uterine treatment with positive galvanism. The large gas-carbon electrodes and high intensities were used with prolonged applications, the uterine cavity being accessible and carefully gone over from fundus to external os. One year after the electrical treatment I curetted her and obtained abundant tissue, which Dr. F. B. Mallory, the pathologist, examined microscopically and said was from hyperplastic endometritis. No. 16, the case of hysterectomy, is another instance. When I laid open the tumor at the close of the operation, abundant soft, pink, velvety tissue, easily scraped off a glistening white surface, lined the entire uterine cavity; and, by the way, neither the pathologist nor I, after a careful search, could find any evidence of a cicatrix in the mucous membrane of the canal.

Cervical stenosis following high intensities has occurred in many of my cases. It prevents subsequent treating the interior of the uterus with large electrodes. It has not caused dysmenorrhea in my experience, and the stricture has never been so tight as to prevent the passage of a probe. In using high intensities it has been my aim to get the tip of the electrode as near the fundus as possible, to obviate the annoyance that might result from a stricture low down.

Second, the symptomatic results. It has seemed simplest and best first to classify the thirty-five cases under four headings, as follows: I., those that were relieved of pain permanently; II., those that were relieved of flowing permanently; III., those in whom there was improvement of general strength and ability to work; and, IV., those that experienced no permanent benefit. Of I. (those relieved of pain) there were eleven cases,



Nos. 1, 2, 4, 9, 14, 15, 18, 19, 21, 22, and 25, out of nineteen cases in which pain was a prominent factor. Of II. (those relieved of flowing) there were seven cases, Nos. 4, 5, 8, 12, 30, 31, and 32, out of twenty-three cases in which flowing was a prominent symptom. Of III. (those improved in general health and ability to work) there were twenty-one, Nos. 1, 3, 4, 5, 6, 9, 11, 12, 15, 17, 18, 20, 21, 22, 23, 24, 27, 29, 30, 31, and 32, out of twenty-five cases where relief was possible. Adding these figures together, and subtracting twelve for numbers inserted more than once, and we have twenty-seven as the number that received symptomatic benefit. The remaining eight of the thirty-five, Nos. 7, 10, 16, 26, 28, 33, 34, and 35, come under heading IV. as having received no permanent benefit. If we analyze the eight cases of IV. we find that four of them may be classed as having received temporary relief. Nos. 10, 26, and 33 were relieved while under treatment, but became as bad as ever when the treatment was stopped. No. 7 complained only of sterility.

Looking now at temporary symptomatic benefit, we may include the entire forty-four cases in the tables. Of the thirty-five just considered we found there were four who were not benefited at all either permanently or temporarily. In the remaining nine of the forty-four, Nos. 36 to 44 inclusive, three received no benefit (they were Nos. 39, 41, and 44), and six, Nos. 36, 37, 38, 40, 42, and 43, were benefited. That is, thirty-seven out of forty-four cases treated, or eighty-four per cent, experienced relief of some sort as a result of electrical treatment. It must be taken into account, in a discussion of these figures, that the patients were treated for the most part at an out-patient clinic. Many of them, better treated at home, were obliged to travel long distances and await their turn for treatment, and then go home, often after a tedious ride in the cars and in inclement weather.

To sum up, seventy-seven per cent of the thirty-five cases received permanent symptomatic benefit, and eighty-four per cent of the forty-four cases received temporary symptomatic benefit.

As regards particular symptoms, two patients, Nos. 23 and 43, were afflicted with a profuse watery drain that was constant and required the use of a napkin. The electrical applications failed to relieve this permanently in either instance. In one, No. 23, it relieved temporarily. One patient, No. 24, has developed a

watery leucorrhea lately, a year after ceasing electrical treatment. Nos. 23 and 33 suffered with the uterine cough spoken of by French writers; galvanism relieved this in a very marked degree in both. No. 23, who had been in the care of a prominent practitioner in town, had made use of nearly every known remedy without result; the cough was entirely cured by galvanism. Palpitation, a common symptom in fibroid cases, and not confined to those suffering with anemia from loss of blood, is favorably affected by galvanism.

Glancing over the results obtained, from an anatomical standpoint I confess to a feeling of disappointment. I have maintained a constant sharp lookout for miracles in the way of sudden disappearance of tumors and marked diminution in size, but as yet have failed to observe any. I do not deny that fibroids sometimes undergo rapid absorption without the aid of electricity. It has been my lot not to see any such. I have, however, seen masses of inflammatory exudate disappear under electrical treatment with a celerity that was almost miraculous.

Twenty-five of my cases, or seventy-one per cent, remained stationary in size. Assuming that fibroids if untreated will increase in size, we are justified in the conclusion that galvanism has an inhibitory effect on the growth of a majority of tumors. Until we know more of the conditions that favor increase or diminution in the size of these tumors, the laws of their pathological growth, we cannot say more. Temporary decrease in size was noted in nine cases, or 25.7 per cent. The decrease was proved to be temporary in six, and the remaining three were lost sight of in four, eight, and eight months respectively. The tumors in my series that increased in size were mostly large multiple growths, and dense rather than soft. They were seven in number, or twenty per cent. The increase in size was in no instance very great. Those that remained of the same size were interstitial and softer.]

I have seen individual nodules reduced a third in size following puncture—*e.g.*, No. 3. Large fibroids are seldom single.

Looking over the symptomatic results, we see a highly satisfactory showing. Of the cases in which pain was a prominent symptom sixty per cent were permanently cured and a considerable portion of the remaining forty per cent were temporarily relieved. Of those in which flowing was an important



symptom, only thirty per cent were permanently cured, although a much larger percentage were temporarily benefited.

I am aware that this low percentage of cures in the hemorrhagic cases does not coincide with the results obtained by other observers. It seems to me that galvanism affects flowing in fibroids in two ways: first, by its tonic effect on the blood vessels and nerves of the pelvis; and second, by direct effect on the endometrium. As regards the first, galvanism is of great benefit in my experience. It generally regulates the flow in time, but in most tumors is not potent enough to check a decided hemorrhagic tendency. As to the second, we have several factors to consider—the size and shape of the electrodes, the duration of the treatments, whether the electrode shall be moved about, and, if so, how often, the intensity of the current, etc. But chief and foremost is the possibility of making a drying galvano-caustic application to the entire bleeding surface; for it is taken for granted that the source of hemorrhage in fibroids is a condition of endometritis of the entire uterine cavity—a thick, spongy, bleeding membrane or an atonic, thin membrane filled with venous radicles. Now, with a patulous os externum and a straight canal of only three inches in length, it is, in my experience, an impossibility to go over every portion of the walls of the uterine cavity with any electrode or series of electrodes made. When the uterine canal makes a sharp turn and is from four to eight or nine inches in length, the absurdity of trying to reach all parts of the interior is at once apparent—this even supposing the external os to be large; if it is small the difficulty is increased. It is a mechanical impossibility to guide the tip of a flexible electrode after it has gone round a corner in a tight canal; a rigid electrode cannot be passed. A considerable portion of fibroid tumors are so distorted that no intra-uterine treatment can be given. To this fact in part may be attributed the comparatively small percentage of cures of flowing in the cases presented. The cases that were treated most carefully, with approved electrodes and high intensities, had a return of endometritis, just as we find is the case in those fibroids that have been curetted. Intra-uterine treatment with galvanism, where feasible, has the advantage over curetting that it does not subject the patient to the discomfort and risks of etherization, and is followed by no systemic reaction, which is often observed after curettement, especially in large tumors. Where the uterine

interior is easily accessible curettement is more thorough; where it is not, electrical application is, in my opinion, the best means of local and general treatment. It far outranks topical applications of carbolic acid, iodine, etc., and is more effective and preferable to ergot and hydrastis, as it has a beneficial instead of a deleterious influence on the digestive organs and the system at large. Many of my cases were helped by galvanism after months of fruitless dosing with ergot and other drugs. Galvanism relieves for about the same time as curetting, allowing for its diminished thoroughness. I want to call special attention to Case No. 8. Here a submucous, pedunculated fibroid, one and a half inches in diameter and having a pedicle three-eighths of an inch through, springing from the fundus uteri, was made to present at the external os as a direct result of two intra-uterine galvanic treatments of eighty and eighty-five milampères positive. The pedicle was then cut, the tumor delivered, and the patient recovered from her flowing. She had previously had a trachelorrhaphy performed at one of our leading hospitals, and later on had been curetted by a well-known operator, without the presence of the polyp being detected.

Here is a good place to speak of the alleged danger of electrical treatment. Some abdominal surgeons have said that it causes abscesses and adhesions. It has done neither in my experience. It is contra-indicated in but two conditions, and those are pregnancy and the presence of acute inflammation. In a paper on the treatment of pelvic inflammation with electricity, published in the *Boston Medical and Surgical Journal* of June 16th, 1892, I cited a case of acute pelvic inflammation that I once treated experimentally with galvanism. She had salpingitis, confirmed by abdominal section. Her symptoms were aggravated by the electrical treatment. The proper application of electricity in the diseases of women is absolutely without danger, even in the presence of pus in the pelvis. I have treated a number of cases with such a condition for months, and later operated on them and removed the disease.

I recall one case in particular, and with your permission will outline it in brief. M. P., 39 years old, the mother of two children, proved on operation to have disorganized tubes and ovaries with abscesses on both sides. She was much benefited temporarily by both intra-uterine galvanism and bipolar vaginal faradism. She was under treatment a year, and had sixteen treatments



with galvanism (P. 8, N. 8,  $40^{\circ}$ – $70^{\circ}$ ) and seven treatments with faradism (M.  $70^{\circ}$ – $100^{\circ}$ ), and then consented to operation.

Some of the patients having pus in their Fallopian tubes are very sensitive to galvanism, but they are not, in my experience, uniformly so, and I cannot agree with Apostoli that electricity is of value in diagnosing this condition. I shall refer to this matter again.

A word as to the claim that electricity causes adhesions. By reference to my records I find that I have opened the abdomen in eight patients whom I had previously treated for longer or shorter periods with galvanism. In six of the eight, well-defined adhesions were to be made out by bimanual examination before the patients were treated with electricity, and the adhesions were found when the abdomens were opened. I have found just as extensive and as strong adhesions in patients on whom no electricity had been used. Of the other two cases, one, No. 10 in my tables to-night, showed no vestige of an adhesion. The other was most interesting for two reasons: there were no adhesions, and, although extremely sensitive to galvanism, there was no pus present. The facts are these: I. F., 29, married and the mother of three children, had a lacerated cervix and prolapsed tubes and ovaries. There was great tenderness on light pressure in the region of the right tube, this symptom having been present two years before, previous to the birth of her last child. I had seen her myself at that time and had noted the condition carefully. She was treated with vaginal galvanism for two months, receiving treatments as follows: N. 5,  $20^{\circ}$ – $25^{\circ}$ ; P. 1,  $25^{\circ}$ ; bipolar vaginal faradism F. 2,  $40^{\circ}$ . Having at that time just read Apostoli's article on the diagnostic value of sensitiveness to galvanism as an indication of the presence of pus in the tubes, I was on the lookout to test the principle. Here seemed to be a suitable case. Mrs. F. could not tolerate the galvanism, even in the small dose of  $20^{\circ}$ ; she was not relieved of great pain in the lower abdomen by faradism, except very temporarily. I diagnosed pus tube and operated. On opening the abdomen I found small, prolapsed, cystic ovaries, and tubes that to every appearance were perfectly normal. There was no adhesion of any sort. She was entirely cured by curetting the uterus, free puncture of the ovarian cysts, and hysteropexy.

Case No.	Name, age, social condition.	Pregnancies.	Description of tumor.	Depth of uterus at beginning, in cm.	Flowing.	Pain.
1	M. L., 35, m.	3 children, 1 abortion.	Multiple, nearly filling pelvis; hard; a nodule at each cornu; mobility limited; lacerated cervix and perineum.	11.5	Profuse at regular periods; 17 napkins.	Constant pain in right groin for 6 years; dysmenorrhea.
2	E. M., 34, m.	1 child, 13 years, 0 abortion.	Small, in posterior wall; retroversion; mobility limited. (Ether examination.)	7.9	Scanty; periods regular.	Constant pain across abdomen; cramps first day or two of catamenia.
3	E. H., 32, s.	.....	Multiple, rising out of pelvis; hard; nodules to right and behind; fundus in front and to left. (Ether examination.)	10.2	Regular; 5 days; 6 to 10 napkins.	Pain across abdomen for several months; cramps with catamenia.
4	D. F., 24, m.	0 children, 1 abortion at 3 mos. 3 years ago.	Multiple, nearly to umbilicus; large masses behind; fundus in front and to right.	12.2	Profuse, every 3 weeks, since abortion 3 years ago; irregular.	Dysmenorrhea 3 years; constant pain in left lower abdomen.
5	M. L. P., 46, s.	.....	Small, interstitial; symmetrical; retroversion; uterus fixed.	9.2	Excessive flowing with periods for 5 years; irregular; 3 weeks; 50 to 75 napkins; lasting two weeks.	Cramps with flow
6	M. F., 48, m.	5 children, youngest 8 years; 1 miscarriage at 6 months.	Small, interstitial; fundus forward on bladder; cervix in hollow of sacrum and ante-flexed; symmetrical.	10.5	Severe flowing at periods for 1 year; 2 weeks' flow; 12 napkins.	No pain.....
7	H. S., 43, m.	0 children, abortion at 6 weeks 9 mos. ago.	Multiple; size of a cocoanut; 2 lobes; mobility good. (Ether examination.)	8.5	Regular; 12 napkins.	.....
8	C. S., 40, m.	7 children, youngest 6 years; 0 abortion.	Small, interstitial; also pedunculated submucous 1½ inches by 1½ inches; salpingitis right side. (Ether examination.)	9.	Bad flowing spells for 2 years, a sheet at a time.	Pain in right groin and lower abdomen for 7 months.
9	A. C., 27, s.; colored.	.....	Interstitial, cocoanut; rising out of pelvis; rather soft; symmetrical. (Ether examination.)	9.5	Scanty; regular...	Cramps across abdomen.
10	M. McK., 40, s.	.....	Small, in anterior wall, size of marble; ante-flexion. (Ether examination.)	7.	Scanty; regular; 1 day.	Constant pain in back and abdomen for 10 years; dysmenorrhea.



General condition.	Number of months under observation.	Number of months from first to last treatment.	Number of treatments.	Description of treatments.	Results.	Depth of uterus at end, in cm.
Of stout build; nervous; a great sufferer with pain.	30	23	50	Intra-uterine, 60°-130°; P. 28, N. 19. Vaginal faradism, F. 3.	Much relieved of pain; not permanently. At end of 1 year tumor a little smaller and mobility good; one nodule pedunculated. At end of 2½ years tumor larger, slightly. Flowing about the same.	12.8
Fair .....	5	5	8	Intra-uterine, N. 5, 32°-55°; P. 3, 55°-70°.	Flowing increased. Dysmenorrhea relieved. Constant pain relieved for 3 weeks at a time.	7.6
Mental depression; an inmate of insane asylum.	8	8	21	Intra-uterine, N. 19, 50°-120° Vaginal punctures, N. 26° 6 minutes, N. 80° 5 minutes.	At end of 8 months mass reduced one-third. Mental condition improved.	
Pallor and anxious expression of countenance; a great sufferer; chronic constipation; girth of abdomen, 80 cm.	24	16	49	Intra-uterine, N. 13, P. 18, 60°-175° Vaginal punctures, N. 14, P. 1, 65°-120° Vaginal faradism, F. 3.	At end of 8 months uterus measured 14 cm. and girth of abdomen 81.5 cm. At end of 2 years exactly the same measurements. Flowing less. Pain and dysmenorrhea relieved. Catamenia regular.	14.
In bed for 2 or 3 days with each flowing; unable to go up-stairs; iron and ergot for 8 months made her worse.	34	10	31	Intra-uterine, P. 29, N. 2, 50°-125°.	In 2 months had the best period in 5 years. In 3 months had gained 20 pounds in weight and not confined to bed with flow; able to go up-and-down-stairs. 1 year, flow of 20 napkins; uterus freely movable; no cramps. 3 years, flow of 20 napkins; regular to a day; has to keep still 2 days.	8.9
Of large frame; poorly nourished; unable to work; had taken ergot for 9 mos. without effect.	25	6	16	Intra-uterine, P. 13, 40°-125°; N. 3, 30°-60°.	After three treatments could do all her work except the washing. After 6 months, flow reduced one-half. Menopause in 1½ years.	
Sterility her only complaint.	4	3	16	Intra-uterine, N. 16, 50°-125°.	At end of 4 months mass not as large.	7.5
Blanched and weak; trachelorrhaphy 6 months ago and curetting 1 month ago.	25	4	2	Intra-uterine, P. 2, 80°-85°	After 2 positive intra-uterine treatments the pedunculated fibroid appeared at os externum and was removed with scissors. Salpingitis the important factor. Refused operation. Too weak to take electrical treatment. After 1 year flow regular, not profuse. General strength very good.	8.8
Unable to stoop; had noticed lump in abdomen for 4 years; girth of abdomen, 68 cm.	26	23	40	Intra-uterine, N. 39, 60°-90° Abdominal puncture, 125° 10 minutes. F. 1, 40 F. 4 minutes.	At end of 11 months girth of abdomen 69.5 cm.; at end of 16 months girth of abdomen 74.5 cm.; at end of 24 months girth of abdomen 74.3 cm. Patient much stouter, however. Tumor, I think, same size. Relieved of cramps. Able to stoop.	11.3
A great sufferer with dysmenorrhea; frequency of micturition.	13	1	18	Intra-uterine, N. 6, 48°-70° Vaginal, N. 12, 45°-80°.	At end of 1 month fibroid smaller and dysmenorrhea somewhat relieved. Dudley's operation for antelexion. 1 year after cessation of treatment fibroid larger, dysmenorrhea worse. Myomectomy.	

Case No.	Name, age, social condition.	Pregnancies.	Description of tumor.	Depth of uterus at beginning, in cm.	Flowing.	Pain.
11	A. P., 44, m.	2 children, youngest 26 years.	Subserous; cocoanut; from left wall; dense; salpingitis. (Ether examination.)	9.	Regular; 3 to 6 days; 6 to 10 napkins.	Pain in left side and back for 6 months; severe dysmenorrhea.
12	A. R. N., 39, s.	.....	Multiple, nearly filling pelvis; one mass size of small cocoanut on left, another, size of orange, on right; mobility good. (Ether examination.)	....	Bad hemorrhage 1½ years ago; flow increased for 3 years; irregular; 9 days; 50 napkins.	Slight dysmenorrhea.
13	M. B., 42, m.	2 children, 13 and 11 years; no abortions.	Interstitial, fetal head; asymmetrical; larger on right; mobility good; lacerated cervix.	10.8	Periods every 3 weeks; more flow every other period; not profuse.	Constant severe pain in back; dysmenorrhea.
14	M. H. L., 50, w., colored.	1 child, 1 abortion.	Multiple, filling pelvis; dense; immovable; cervix so distorted that probe cannot be passed more than 1½ inches.	....	Profuse flowing at periods for 4 years; 8 days' flow every 2 weeks; 8 napkins a day.	Constant severe pain in back, worse on walking; also pain in abdomen.
15	E. A., 30, m.	2 children, 1 abortion.	Interstitial, fetal head; dense; symmetrical; mobility good; lacerated cervix; salpingitis.	...	Flow rather profuse every other month; regular.	Pain in left side and back; bearing-down feeling; dyspareunia.
16	E. F., 33, m.	1 child, 7 years.	Interstitial, cocoanut; rather soft; more on left; mobility good.	10.2	Rather profuse and prolonged; regular; 28 days.	Constant bearing-down pain in abdomen; 3 attacks of bad abdominal pain in last 10 months.
17	S. T., 41, m.	3 children, 1 abortion.	Large interstitial, rising above umbilicus; umbilical hernia.	20.5	Profuse; regular; watery leucorrhea; 10 napkins a day and 4 napkins a night.	.....
18	S. H., 38, m.	4 children, 13 to 5 years; 0 abortion.	Interstitial, cocoanut; dense; freely movable; lacerated cervix.	13.	Profuse flowing for 1½ years; a napkin every hour when bad; of 9 days' duration; regular every 26 to 30 days until 1½ years ago.	Dysmenorrhea for 1½ years, increasing in severity.
19	K. C., 32, m.	0 children, 1 abortion at 9 weeks 2 years ago.	Subserous, orange; to right and behind fundus; mobility good.	7.8	Rather profuse; regular.	Constant pain in left side and back for years.



General condition.	Number of months under observation.	Number of months from first to last treatment.	Number of treatments.	Description of treatments.	Results.	Depth of uterus at end, in cm.
Fat and hysterical; unable to do much work; hypersensitive.	14	9	39	Intra-uterine, N. 17, 35°-65°. Vaginal, N. 7, P. 2, 85°-50°. Vaginal faradism, F. 13, F. 50°-100°.	Unable to determine exact size of tumor at end of treatment without anesthesia; think it was the same. Sensitiveness relieved temporarily. Dysmenorrhea relieved. Able to do more work.	
Anemic; of stout build; confined to bed with each flowing.	24	11	20	Intra-uterine, P. 2, N. 7, 40°-70°. Vaginal puncture under ether by Dr. Baker, 125°, N. 15. Vaginal galvanism, N. 8, 35°-60°. Faradism 3, F. 70.	Flow relieved; 20 napkins; not regular. Able to work after 3 months' treatment. At end of 1 year tumor larger; at end of 2 years tumor larger.	
Fair; constipated..	18	17	61	Intra-uterine, P. 36, 60°-90°; N. 19, 40°-75°. Bipolar vaginal faradism, F. 6, 100°.	Periods regular every 4 weeks. Flow a little increased in amount. Pain in back uniformly relieved for 2 days after each treatment, then to return. Tumor same size.	11.
Weakness from excessive flowing; painful micturition and defecation.	18	18	29	Intra-uterine, P. 19, N. 3, 50°-100°. Vaginal, P. 4, 50°-60°. Bipolar vaginal faradism, F. 3, 75°-100°.	After 8 months tumor smaller, after 1½ years tumor same size. Flowing, 8 napkins a day for 3 or 4 days instead of 8 days every 3 weeks. Constant pain relieved.	
Of stout build; neurotic.	8	7	13	Intra-uterine, N. 7, P. 2, 40°-70°. Vaginal, P. 2, N. 1, 40°. Faradism, F. 1, 60°.	At end of 8 months tumor reduced to size of large orange. Flow as before. Pain relieved. Improved strength.	
Much pulled down by attacks of abdominal pain; frequency of micturition.	18	3	13	Intra-uterine, N. 11, 40°-70°. Vaginal, P. 1, 35°. Faradism, M. 1, 50°.	At end of 3 months tumor smaller. Flow decreased, but every 3 weeks. Pain relieved. No attacks of abdominal pain. At end of 1 year tumor larger. Flow profuse. One attack of abdominal pain. Very miserable. Hysterectomy (Baer's method). Recovery.	12.2
Annoyed by size of tumor; watery drain and general weakness; girth of abdomen 103 cm.	18	4	26	Intra-uterine, P. 17, 100°-175°; N. 9, 75°-200°.	At end of 5 months girth of abdomen 103 cm.; at end of 1½ years girth of abdomen 101 cm. Increase of fat in parietes; had worn an umbilical truss for 6 months. More room in abdomen. Increased strength. Watery drain and flow same.	
Large, stout; very nervous; easily startled; alcoholic (?).	12	2	8	Intra-uterine, N. 4, P. 2, 60°-100°. Vaginal, P. 3, 15°-70°; F. 3, 70°.	Increased pain for 2 weeks after last treatment. At end of 1 year tumor same size. Flowing and pain 4 months after cessation of treatment; an abortion 6 months after. Periods regular (26 to 30 days), 4 to 6 napkins, since. Able to work more.	
Fair .....	18	15	41	Intra-uterine, P. 23, 35°-150°; N. 11, 50°-100°. Vaginal, N. 2, 50°-80°. Puncture, N. 1, 50°; F. 4.	At end of 6 months tumor smaller; at end of 1½ years tumor larger. Flow increased in amount and periods prolonged. Pain relieved for a few days at a time. On the whole much less pain than 1½ years ago.	9.

Case No.	Name, age, social condition.	Pregnancies.	Description of tumor.	Depth of uterus at beginning, in cm.	Flowing.	Pain.
20	A. R. H., 38, s.	.....	Subserous; goose egg, from right side of fundus. (Ether examination.)	8.2	Rather profuse; regular.	Dysmenorrhea; moderate.
21	J. S. R., 43, m.	2 children, 19 and 17 years; 0 abortion.	Multiple and interstitial, filling cavity of pelvis; large lobe behind.	8.6	Regular; normal..	Frightful cramps with periods, causing her to give up work for 6 years.
22	F. M. S., 36, s.	.....	Subserous; hen's egg, in left lateral wall of uterus; retroversion; mobility good. (Ether examination.)	9.5	Profuse for 2 years; catamenia every 23 days; 50 napkins.	Constant pain in back; unable to turn over in bed.
23	M. H. H., 40, m.	0 children, 0 abortion.	Interstitial. cocoanut; mobility limited. (Ether examination.)	9.3	Menorrhagia for 5 years; flow every 3 weeks; 30 to 40 napkins; shreds and clots; a clear watery discharge between periods.	Dysmenorrhea for first 3 days.
24	M. A. S., 36, s.	.....	Multiple, large, to edge of ribs; 2 lobes, large, and smaller above and between. (Ether examination.)	19.	Menorrhagia for 2 years; every 8 weeks; 21 napkins.	Dysmenorrhea ..
25	N. O'H., 30, m.	1 child, 10 years; 0 abortion.	Interstitial, orange; tumor more on left; mobility good.	8.4	Menorrhagia for 2 years; every 30 to 32 days; 5 days; 20 napkins.	.....
26	M. C., 38, m.	4 children, youngest 12; 0 abortion.	Interstitial, small; symmetrical, except slightly larger on left. (Ether examination.)	8.9	Profuse flowing every 4 weeks for 9 months; 40 napkins; 4 to 5 days.	.....
27	E. P. C., 35, m.	3 children, youngest 9; 0 abortion.	Interstitial, small; mostly in posterior wall; retroversion; lacerated cervix; mass in cul-de-sac (tubo-ovariitis). (Ether examination.)	9.2	Profuse flowing off and on for 7 years; nearly constant; freedom for 3 mos. once during that time.	.....
28	H. B., 43, m.	3 children, youngest 15; 1 abortion at 3 months.	Interstitial, small; in posterior wall from external os to one-half inch of fundus; lacerated cervix and perineum; retroversion. (Ether examination.)	9.	Profuse flowing for 3 months; metrorrhagia; catamenia always profuse.	.....



General condition.	Number of months under observation.	Number of months from first to last treatment.	Number of treatments.	Description of treatments.	Results.	Depth of uterus at end, in cm.
Neurotic; stout; nervous prostration 6 months ago; consulted physician because of frequency of micturition.	27	24	45	Intra-uterine, N. 28, P. 9, 35°-70°. Vaginal faradism, ± F. 8, 50°-100°.	Treatment followed curetting and was in 3 periods of 3 months each. Tumor changed location, moving down to cervix; at end of 2 years same size (ether examination). Nervous symptoms and frequency of micturition relieved. Bad flowing, had to curette.	8.2
A hard-working woman of spare build; chief complaint, cramps; soreness across abdomen.	27	25	24	Puncture in lobe behind, N. 8, 35°-230°; P. 3, 60°-80°. Intra-uterine, N. 8, 50°-80°; P. 5, 40°-50°.	Seen at infrequent intervals. Cramps entirely relieved after first treatment for 5 months, then 2 cramps. Treatment for 1 month and no further cramps. At end of 2 years tumor same as at beginning. Great gain in flesh and strength.	8.6
A great sufferer with pain; difficulty in walking because of pain; general health good.	36	24	41	Intra-uterine, N. 17, P. 5, 50°-80°. Vaginal, N. 18, P. 1, 50°-100°. Faradic, F. 2, 75°-100°.	At end of 6 months backache almost entirely relieved. Catamenia of 25 napkins, and painless. At end of 3 years tumor same size; no pain. Has had no treatment for 1½ years. Flow regular.	9.5
Very anemic; dyspnea; cough; general weakness; curetting 3 times, a year ago.	12	9	28	Intra-uterine, P. 28, 40°-130°. Vaginal, P. 4, 50°. Faradic, F. 1.	After 2 months, had not had so little watery discharge for 5 years. Flow of 15 napkins. Cough relieved; strength improved. After 1 year, flowing severe, requiring packing, tumor same size. Oophorectomy and cure.	9.3
Of large frame; nervous temperament; general health good; girth of abdomen 94.5 cm.	19	2	12	Intra-uterine, P. 11, 100°-180°; N. 1, 100°. Prolonged treatments with large tips.	After 3 months girth of abdomen 102.5 cm.; after 1½ years girth of abdomen 106 cm. Tumor a little larger. Flow regular every 4 weeks, 18 napkins. A watery discharge lately.	19.
Constant pain across abdomen; unable to sleep because of pain.	6	3	12	Intra-uterine, P. 1, 50°; N. 7, 50°-70°. Vaginal, 1, 75°. Faradic, F. 3, M. 50°-60°.	At end of 6 months tumor same size. Pain entirely relieved. Flowing same.	8.4
Weakened by repeated flowings; nervous, and sensitive about uterus; treatment followed a curetting.	18	1	6	Intra-uterine, P. 6, 55°-75°.	Flow of 14 napkins 10 days after cessation of treatment; another of 20 napkins 1 month after treatment. At end of 1½ years flowing irregular but profuse.	8.9
Stout; flesh flabby; nervous prostration 15 years ago, and never well since; treatment followed a curetting.	18	14	20	Intra-uterine, P. 17, 55°-125°. Vaginal, P. 3, 60°-85°.	In 6 weeks mass in cul-de-sac had disappeared and uterus freely movable. At end of 7 months, flow of 20 napkins each month for 3 months, then amenorrhea for 4 months. At end of 1½ years, flow regular (7 days, 10 napkins). Curetting and trachelorrhaphy. Endometritis.	8.9
Small frame; poorly nourished; anemic; under observation for 9 years.	9	2	6	Intra-uterine, P. 6, 50°-80°.	After 2 treatments, flow the same. Curetted, and relief for 3 months, then bad flowing. Ether, and finger in cavity of uterus, curetting, and further intra-uterine galvanism. No flow for 3 months, then as before.	9.

Case No.	Name, age, social condition.	Pregnancies.	Description of tumor.	Depth of uterus at beginning, in cm.	Flowing.	Pain.
29	E. B., 28, m.	0 children, 0 abortion.	Interstitial, small; in posterior wall just above os internum; ante flexion; retro position. (Ether examination.)	8.9	Menorrhagia for 1 year; catamenia regular; 16 napkins; leucorrhea.	Dysmenorrhea; headaches.
30	M. W., 50, m.	5 children, youngest 20.	Interstitial, cocoanut; symmetrical; mobility good; lacerated cervix and perineum; cystocele.	9.5	Bad "flooding" 4 months ago; catamenia regular until then and since; menorrhagia 4 months.	Continuous pain in small of back.
31	M. P. P., 30, m.	2 children, 12 and 11 years; 13 abortions at 3 to 5 months.	Interstitial, small; symmetrical; solid tumor right ovary size of duck's egg; syphilis. (Ether examination.)	7.2	Severe flowing every 2 weeks for 3 months; 25 napkins; last abortion 6 months ago.	Headaches . . . . .
32	M. D., 37, s.	.....	Subserous; English walnut, from left wall of fundus; ante flexion; symmetrical enlargement; mobility good. (Ether examination.)	8.7	Profuse and irregular catamenia for 1½ years.	.....
33	C. B., 40, m.	2 children..	Subserous; goose eggs, one on each side of fundus; retroversion; prolapsed and adherent adnexa. (Ether examination.)	7.8	Catamenia irregular; 5 days; 10 napkins.	Pain in back and across abdomen.
34	K. B., 47, s.	.....	Interstitial, cocoanut; dense; symmetrical; retroflexed.	7.8	Regular every 23 days.	Dysmenorrhea always present, increasing in severity; now in bed 2 days with catamenia.
35	S. G., 33, m.	0 children, 0 abortion.	Interstitial, cocoanut; symmetrical; retro posited.	7.5	Every 14 to 21 days; 5 to 6 days' flow; 12 napkins.	Slight dysmenorrhea.
36	M. B., 35, m.	0 children, 1 abortion at 3½ mos.	Interstitial, nearly filling pelvis; dense; subperitoneal nodules; old cicatrices in vagina from pelvic abscesses.	9.	Irregular .....	Dysmenorrhea ..
37	A. A., 47, m.	3 children, youngest 14; 2 abortions.	Multiple, nearly filling pelvis; 2 lobes.	11.	Metrorrhagia; profuse for last 3 mos.; previously regular; 2 or 3 napkins a day for 2 weeks.	Pain in right abdomen for 6 years.
38	E. L., 43, m., colored.	1 child, 18 years.	Interstitial, cocoanut; mostly in right wall of uterus; a few small subserous nodules on the left.	9+	Regular every 4 weeks; 1 week; 10 napkins.	Pain in back and loins for 3 years; pain worse for 4 weeks; unable to sleep, it is so severe.



General condition.	Number of months under observation.	Number of months from first to last treatment.	Number of treatments.	Description of treatments.	Results.	Depth of uterus at end, in cm.
Never in rugged health; 8 attacks of "inflammation of womb"; tumor removed from cervix 3 years ago; treatment followed curetting.	18	6	34	Intra-uterine, P. 7, N. 9, 25°-45°. Antiseptic cataphoresis with creosote, 8 N., 25°-40°. Vaginal, N. 6; F. 4.	Flow reduced in amount; irregular. Leucorrhea not relieved. Pain relieved. General strength improved.	
Stout; nervous; hot flashes for 6 months; "sagging of womb."	16	11	27	Intra-uterine, P. 15, 35°-100; N. 3, 60°-100. Vaginal, N. 6, 25°-60°. Faradic, F. 3, 70°.	Flow decreased in amount; irregular after 5 months; occasional flowing spells since, every 4 to 6 months. Hot flashes absent 5 months after beginning treatment; returned in 5 months, though less troublesome. Less pain in back. Tumor same.	9.6
Of small frame; anemic; hyper-sensitive about uterus; unable to work; treatment followed curetting.	24	4	30	Intra-uterine, P. 6, 50°-60°. Vaginal, right, P. 7, 50°-60°; N. 17, 30°-50°.	After 1 month flow of 16 napkins. Ovarian tumor one-half former size. After 3 months ovary twice normal size, and has remained same size. Became pregnant. Able to do hard work. Uterus same as before. Local sensitiveness relieved, and headaches by potassium iodide.	7.
Anemic from loss of blood; dyspeptic; treatment followed curetting.	18	2	9	Intra-uterine, P. 6, 55°-90°. Vaginal, P. 3, 15°-50°.	After 4 months had flowing of 24 napkins, then regular, 12 napkins or less. At end of 1½ years no further flowing. Occasionally skips a month.	
Dysuria; cough; syphilis.	7	6	18	Intra-uterine, N. 8, 40°-80°. Vaginal, N. 8, 20°-60°. Faradism, M. 2, 35°.	At end of 7 months tumors same size. Relieved of cough, not of dysuria. Myomectomy in 7 months. Relief.	7.8
Well except at time of catamenia.	12	10	21	Intra-uterine, N. 6, 50°-70°. Vaginal, P. 4, 30°-60°; N. 6, 35°-100°. F. 5, M. 50°-100°.	At the end of 1 year no relief of dysmenorrhea. Skips a month every few months. Tumor same size.	
Unable to work; hurts her to sit down.	9	8	9	Intra-uterine, P. 3, 50°-100; N. 3, 50°-60. Vaginal, P. 3, 60°. Faradic, F. 35.	Flow increased in amount. Tumor same size.	7.5
Chief complaints are lumps in abdomen and abdominal tenderness; under observation at Free Hospital for 9 years.	4	2	9	Faradism, vagino-abdominal, F. 8, 70°-100°. Vaginal galvanism, P. 1, 30°.	Tenderness of abdomen invariably relieved by faradism. Galvanism caused increased tenderness and pain.	
Alcoholism.....	2	2	6	Intra-uterine, P. 6, 50°-70°.	Flow diminished. Had a hemorrhage from the lungs, and very sick at home. Passed from under observation.	
Loss of flesh; hot flashes that make her weak.	2	2	8	Intra-uterine, N. 5, P. 1, 40°-70°. Vaginal, N. 1, 50°; P. 1, 35°.	At end of 2 months pain much relieved. Hot flashes less troublesome.	

Case No.	Name, age, social condition.	Pregnancies.	Description of tumor.	Depth of uterus at beginning, in cm.	Flowing.	Pain.
39	M. B., 27, s.	.....	Multiple, filling pelvis and part of abdomen; a portion submucous and presenting at os externum, which was dilated to size of a silver dollar.	13	Severe flowing 8 months ago and for last 3 weeks; previous to 8 months, regular; 4 to 5 days; 10 napkins.	Pain in back for 1 year.
40	K. C., 40, m.	0 children, 0 abortion.	Interstitial, cocoanut; most of tumor in anterior wall of fundus; mobility good.	10	Irregular flowings for last 7 years; very bad of late; 24 napkins every 2 weeks.	Pain in right hip.
41	M. C., 39, s.	.....	Interstitial, cocoanut; uterus distorted; os externum on side; dense; hemorrhoids.	....	Catamenia profuse for 2 years; 16 to 20 napkins; clots.	Pain in back for 7 years; dysmenorrhea, severe; has to give up work for 4 days each time.
42	A. V., 45, m.	0 children, 0 abortion.	Multiple, large, half filling abdomen; 2 lobes.	11.6	Regular; 4 days; 8 napkins.	Pain in back for 2 years.
43	T. S., 37, m.	13 children, oldest 17, youngest 2; 0 abortion.	Interstitial, small; symmetrical; dense; tubo-ovaritis right side; mobility good; lacerated cervix and perineum.	10.8	Menorrhagia, profuse for 10 mos.; worse every second month.	Pain in back for 2 years, so bad that she cannot sit or walk.
44	R. R. G., 40, m.	3 children, youngest 8; 3 abortions.	Interstitial; small; symmetrical; retroverted; hard; lacerated cervix and perineum.	10.2	Regular every 3 weeks; 6 days; 12 to 14 napkins.	Pain across abdomen.

A year ago I was present at an oöphorectomy performed by one of the leading operators in Boston. The case was a large fibroid that had been treated, a year before the operation, by puncture through the abdominal walls with steel needles. It so happened that I was present also when the punctures were made, one in January and the other in March, and know that the first was of one hundred and twenty milampères for twelve minutes, and the second of one hundred and twenty-five milampères for the same length of time. When the abdomen was opened there were no adhesions; and moreover, after careful inspection of the tumor, there were no vestiges of the punctures to be seen on its surface. I have been informed by several operators that they have had similar experiences. While we are on the subject of puncture I wish to say that I have punctured



General condition.	Number of months under observation.	Number of months from first to last treatment.	Number of treatments.	Description of treatments.	Results.	Depth of uterus at end, in cm.
Thin; anemic; a chronic tea drinker; very nervous; hardly strong enough to report at clinic; timid.	2	2	9	Punctures in sub-mucous mass in os externum, P. 125°, N. 125°-150°. Electrode in os, P. 3, 35°-40°; N. 2, 50°-100°; F. 100°.	A lively hemorrhage after one of the punctures controlled by gauze packing. Not strong enough to follow up treatment. Pain relieved. Tumor same size.	
Of spare build; poorly nourished.	1½	1½	6	Intra-uterine, P. 6, 65°-100°; F. 100°.	After first treatment back felt better than it had felt for 13 months. One flow of 12 napkins and 1 flow of 5 napkins. By breaking of rheostat patient received a shock. Never seen again.	
Occasional vomiting.	1½	1½	8	Vaginal, P. 2, 50°-60°; N. 6, 40°-60°.	Pain and vomiting increased. Treatment preparatory to puncture, but patient intolerant. Unable to trace her.	
Loss of flesh.....	1	1	6	Intra-uterine, P. 1, 70°; N. 5, 50°-100°.	Treatment caused some flowing and pain. Patient did not continue under observation. Wrote 1 year later that she had had electricity at home and was better.	
Stout; flesh flabby; anxious expression to face; very miserable with pain; hyperesthesia of abdomen.	1½	1½	10	Intra-uterine, P. 10, 35°-100°; F. 100° with same electrodes as for galvanism and following it.	After 2 weeks and 6 treatments pain gone. Able to walk and sit. At end of 1½ months pain relieved. Patient left town and lost track of. Tumor smaller.	9.6
Of large frame; flesh flabby; anemic; previous treatment with tonics and pessary for 1½ years.	3	3	8	Intra-uterine, P. 2, 63°-65°; N. 4, 35°-65°. Positive with carbon tips and following negative. F. 20.	Flow rather increased. Size about the same.	9.9

with two needles through the abdominal walls, the patient being under ether, several times. No harm resulted in the cases I did. Nevertheless the method does not appeal to me. I fear intra-peritoneal hemorrhage or accidental puncture of the bowel. Puncture through the vagina, using as the other pole the clay plate on the abdomen, I have done a great many times, without ether as a rule, and exceptionally with it. I have never had a bad result. The chief objection to the method is its painfulness if used without anesthesia. It is applicable in only a limited number of cases, because of the danger of wounding the bladder, ureters, or rectum.

Intra-uterine treatment is to be preferred to puncture. This is often painful if high intensities are used, especially in the case of small tumors. We have not here in Boston such phlegmatic

patients as are seen in the clinics abroad. It is a mistake to begin electrical treatment with intra-uterine applications and with high intensities. Many of our nervous single women, especially those in the higher walks of life, have to be handled very carefully. Even when a patient has become accustomed to intra-uterine treatment she may not be able to tolerate more than sixty or seventy milampères; it is common to see patients who cannot. Treatments should, as a rule, be begun with vaginal galvanism or faradism. The larger the tumor, other things being equal, the greater the tolerance to intra-uterine and puncture treatment and to high intensities. Here let me testify to the good results obtained from the use of faradism from the fine coil for the dissipation of the pain caused by galvanic treatment. Bipolar vaginal or intra-uterine has, in my hands, yielded most gratifying results. As a rule, it may be said that the pain of fibroids is best relieved temporarily by faradism and permanently by galvanism.

Coming now to my third classification of symptomatic results, we find that twenty-one cases were improved permanently in general health and rendered better able to work. Leaving out of consideration those that were not benefited because the flowing or pain with which they suffered were not relieved, we have twenty-one out of twenty-five cases, or eighty-four per cent, permanently cured. It is often surprising to see the improvement in general health following one or two treatments with electricity. A patient previously a great sufferer with pain, emaciated, of anxious countenance, unable to go up or downstairs, to sweep, dust, or in fact to do any of her own work, after taking a few treatments becomes cheerful, loses that drawn, worried look, can endure more, and gradually gains flesh. Nothing in my experience has been capable of producing such results in fibroids as galvanism, and galvanism applied locally. I have tried general electrization in these cases, but without any such marked improvement as characterizes local galvanization. Surely it is more rational to apply the remedy as nearly as possible at the seat of the disease.

I think that every patient suffering with a fibroid tumor of the uterus should be under competent medical supervision. She should be seen from time to time, and, if the symptoms warrant, should be treated. In this way only have we any surety that the patient will not be subjected to needless dangers.



and distressing symptoms later on. Fibroids, I believe, are not the harmless tumors they have been thought to be; although they seldom kill quickly, they wear out slowly, and many a woman leads a life of misery and suffering because the profession has believed and advised that nothing but hysterectomy could relieve. It is my experience that women with fibroids do not arrive at the menopause until from seven to ten years after the age at which most women reach the climacteric. Not only that, but they are more subject to pain, flowing, and exaggerated and distressing nervous symptoms, to say nothing of the dangers of malignant degeneration and kidney disease from pressure, during the period of life from 40 to 60 years of age, than is commonly supposed by the profession at large. Besides this, a great many fibroids are not absorbed after the climacteric; certain of them undergo degeneration, and some become malignant. As we learn more and more about these tumors, and better appreciate the symptoms to which they give rise, their laws of growth, the dangers to the economy from long-continued pressure, and as the technique of hysterectomy is improved and the mortality lowered, it is my opinion that the operation for total removal will be practised more and more often, and earlier and earlier in the life history of fibroids. When patients are in such poor condition from long neglect that such a radical measure is contra-indicated, electricity offers us a means to prepare them for the great strain of an operation. I believe that the results of hysterectomy will be better when the patients are more carefully prepared. There will always be a large number of fibroids where operation is inexpedient or refused and where the suffering is considerable. As physicians our duty is to relieve this suffering, and because too much has been claimed for electricity is no reason why we should neglect it altogether. It is, in my opinion, the best therapeutic measure at our command with which to treat fibroid tumors of the uterus, because most tumors treated with it do not increase in size, because it is absolutely safe, because it will relieve pain in a very large number and hemorrhage in some, and because it is sure to improve the general health and strength.

*Conclusions.*—1. Hysterectomy is contra-indicated in a majority of cases of fibroids because of the high rate of mortality and because it unsexes the patient—the latter an important consideration in younger women.

2. Electricity is the best therapeutic means at our disposal to combat pain, hemorrhage, and impaired health and strength.

3. Intra-uterine galvanism is most advisable.

4. We must not look for a permanent reduction in the size of the tumor.

5. Galvanism—vaginal, intra-uterine, or by puncture—does not cause abscesses or adhesions.

6. Galvanism is of no use as a means of diagnosing the presence of pus.

7. Treatment by electricity after the Apostoli method is absolutely safe.

8. Every case of fibroid tumor of the uterus should be under competent medical observation, because of the danger of malignant degeneration, kidney disease from pressure on the ureters, complications during pregnancy, and the liability of the occurrence of pain and hemorrhage, and functional nervous disorders, especially during a delayed and protracted menopause.

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